

# Work Order ID 48543

June 26, 2009 7:40:47 AM



Page 1

Item ID: D3319-1 **GY**

Accept



Setup Start



Revision ID: B

Stop



Item Name: Wearplate

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00

Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3319

Rev B

100

0.00



FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg D3319 1 Dwg Rev: B Prog Rev: B 2-  
Deburr if necessary

HB 9-7-1

110

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

HB 9-7-1

9

120

0.00



QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

- 8 02/07/01 (XS)

**Work Order ID 48543**

June 26, 2009 7:40:47 AM



Page 2

Item ID: D3319-1

Accept



Setup Start



Revision ID: B

Stop



Item Name: Wearplate

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

0.00



Small Fab

Small Fab

Memo

Deburr if necessary

0.00  
u/a

140

0.00



Brake NC

NC BRAKE

Memo

1- Form using DT8326 & DT8261 as per Dwg D3319Rev: B ; 2- Form  
flat on press using DT8776 block

SD 09/07/06

9

150

0.00



QC

QC6- Inspect dimensions to drawing

Memo

0.00

=&gt; 8091071.06 (XS)

Quality Control

# Work Order ID 48543

June 26, 2009 7:40:47 AM



Page 3

Item ID: D3319-1

Accept



Setup Start



Revision ID: B

Stop



Item Name: Wearplate

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160

0.00



Large Fab

Large Fab

Memo

0.00

Large Fab

1- Layout weld location as per Dwg D3319 using jig D3319-1T312- Weld hard surface using D3319-1T2 per QSI 004 and Dwg D3319 Rev: B Qty Part  
Number Description Batch 1A/R N/A 7560  
Hardcoat Rod M109813.

SP 09-07-07. (84)

170

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

=> 80267/07 (48)

180

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

=> 80767/07 (48)

# Work Order ID 48543

June 26, 2009 7:40:47 AM

Page 4

Item ID: D3319-1

Accept

Revision ID: B

Item Name: Wearplate

Setup Start

Stop

Start Date: 15/07/2009 Start Qty: 8.00

Required Date: 03/08/2009 Req'd Qty: 8.00

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190

Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

7:15 AM

FINISH TIME:

OVEN TEMPERATURE:

320°F

M109091

09-07-08

(X8) JH

200

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

09-07-08 (8)

BA

210

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify on inside surface using a permanent fine point marker with the following: TCCA-PDA, Dart Aerospace Ltd. P/N: D3319-1, B/N: BXXXXX! For Product Eligibility see PDA05-18. and Stock Location: 491

9/4/9 (8) SP

# Work Order ID 48543

June 26, 2009 7:40:47 AM



Page 5 -

Item ID: D3319-1

Accept



Setup Start



Revision ID: B

Stop



Item Name: Wearplate

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

220

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/07/09 *[Signature]*

*MF*  
09-07-08

# Picklist Print

June 26, 2009 7:40:46 AM

Page 1

Work Order ID: 48543

Parent Item: D3319-1RevB

Parent Item Name: Wearplate



Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 8.00

Required Qty: 8.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
M1010S18GA		Purchased	No			100	sf	0.0000	5.2884			
				M 111964	IB 9-7-1							
1010/1025 SHEET .048												

Date: Friday, 12/06/2009 9:55:18 AM  
 User: Julie Dawson

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : WEARPLATE
<b>Job Number</b> : 48543	
<b>Estimate Number</b> : 10437	
<b>P.O. Number</b> :	<b>Part Number</b> : D33191
<b>This Issue</b> : 12/06/2009 <b>S.O. No.</b> :	<b>Drawing Number</b> : D3319 REV. B
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : / / <b>Type</b> : SMALL /MED FAB	<b>Drawing Revision</b> : B
<b>Previous Run</b> : 48119	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 19/06/2009 <b>Qty:</b> 8 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> : <u>JLD 09.06.02</u>	
<b>Comment</b> : Est: B 05.10.14 Added step 9, dwg rev B KJ/EC	
Est Rev:C Now on Waterjet 06-10-26 JLM	

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
----------------	------------------------------	----------------------

1.0	M1010S18GA	1010/1025 SHEET .048
-----	------------	----------------------



**Comment:** Qty.: 0.6594 sf(s)/Unit Total : 5.2752 sf(s)  
 1010/1025/A21/6aA SHEET .048  
 Batch: 11 964 B 9-7-1

2.0	WATER JET	FLOW WATER JET
-----	-----------	----------------



**Comment:** FLOW WATER JET  
 1-Cut as per Dwg D3319  
 Dwg Rev: B  
 Prog Rev: B

B 9-7-1

2-Deburr if necessary B 9-7-1

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



**Comment:** INSPECT PARTS AS THEY COME OFF MACHINE

4.0	QC8	SECOND CHECK
-----	-----	--------------



**Comment:** SECOND CHECK

5.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
-----	-------------	-------------------------------



**Comment:** SMALL & MEDIUM FAB RESOURCE 1  
 Deburr if necessary

S 010701 (49)  
u/bs

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



Date: Friday, 12/06/2009 9:55:18 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: WEARPLATE

Job Number: 48543

Part Number: D33191

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

BRAKE NC

NC BRAKE



Comment: NC BRAKE

1- Form using DT8326 & DT8261 as per Dwg D3319 Rev: B

2- Form flat on press using DT8776 block

SB 09/07/06

(9)

7.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

S 09/07/01 (x8)

8.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1- Layout weld location as per Dwg D3319 using jig D3319-1T3

2- Weld hard surface using D3319-1T2 per QSI 004 and Dwg D3319 Rev: B

Qty Part Number Description

Batch

A/R N/A

7560 Hardcoat Rod

11/09/03

SP 09.07.07

(8x)

9.0

QC10

VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

S 09/07/02 (x8)

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/07/02 (x8)

11.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Grey Sandtex (Ref: 4.3.5.6) as per QSI 005 4.3

START TIME: 7:15am

OVEN TEMPERATURE: 320°C

FINISH TIME: 7:45am

09-07-08

x8

MF

12.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 12/06/2009 9:55:18 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: WEARPLATE

Job Number: 48543

Part Number: D33191

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify on inside surface using a permanent fine point marker with the following:

TCCA-PDA, Dart Aerospace Ltd.

P/N: D3319-1, B/N: BXXXXX

For Product Eligibility see PDA05-18  
and Stock

Location: \_\_\_\_\_

14.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 148543
<b>Description:</b> Wearplate		<b>Part Number:</b> D3319-1
<b>Inspection Dwg:</b> D3319	<b>Rev:</b> B	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

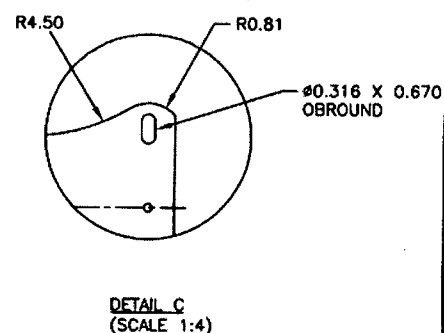
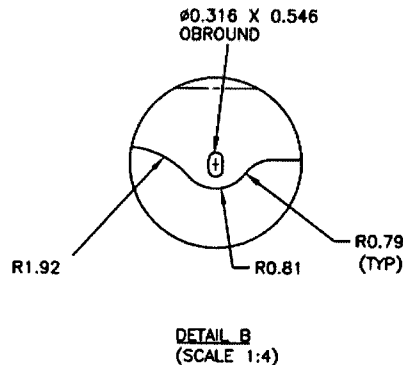
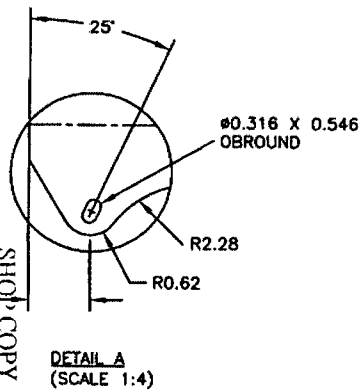
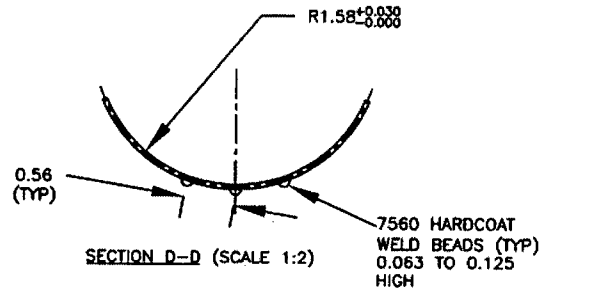
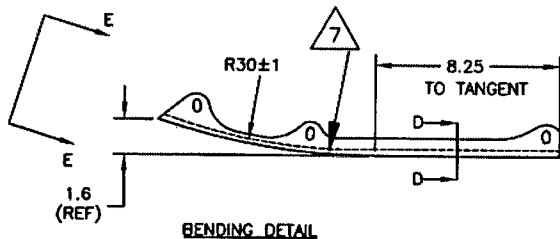
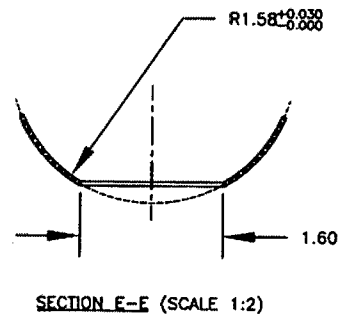
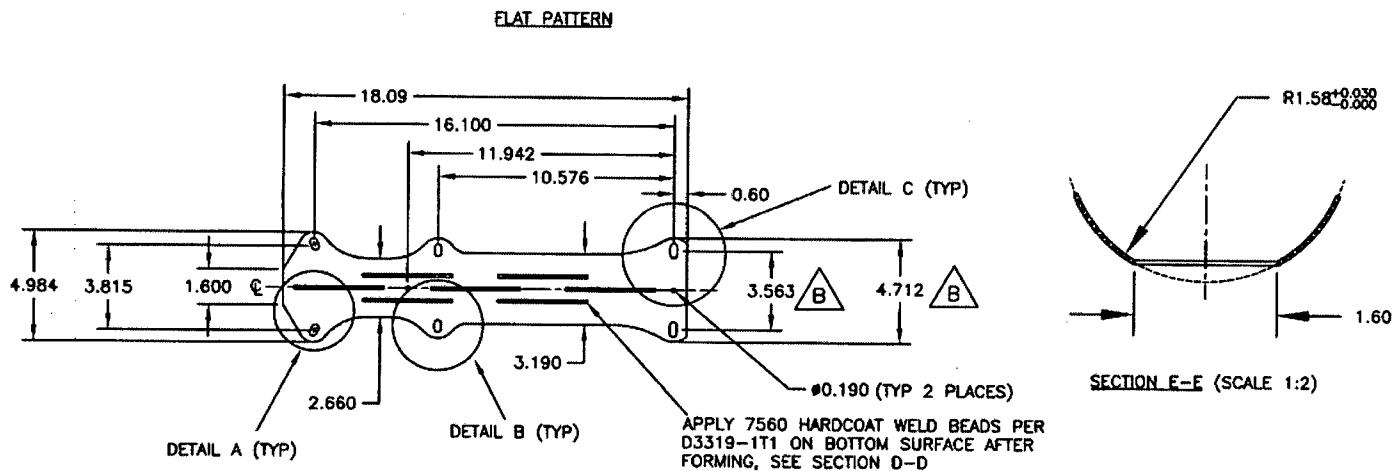
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.984	+/-0.010	4.984	X			
1.600	+/-0.010	1.601	*			
2.660	+/-0.010	2.660	X			
3.190	+/-0.010	3.193	*			
3.563	+/-0.010	3.564	*			
4.712	+/-0.010	4.711	*			
0.60	+/-0.030	.601	*			
10.576	+/-0.010	10.576	*			
11.942	+/-0.010	11.942	X			
18.09	+/-0.030	18.09	X			
Ø0.316 x 0.546	+0.006/-0.001 x +/-0.010	.317 x .546	*			
Ø0.316 x 0.670	+0.006/-0.001 x +/-0.010	.317 x .674	*			
Ø0.190	+0.005/-0.001	.193	*			

<b>Measured by:</b> JB	<b>Audited by:</b> S	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 9-7-1	<b>Date:</b> 08/07/01	<b>Date:</b>	N/A

<b>Rev</b>	<b>Date</b>	<b>Change</b>	<b>Revised by</b>	<b>Approved</b>
A	07.05.31	New Issue	KJ/JLM	JA

**DART**



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05-09-30-100

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WITHOUT NOTICE

D3319-1 WEARPLATE

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:  
"TCCA-PDA, DART AEROSPACE LTD., P/N D3319-1 B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-18"

DESIGN	DRAWN BY	DART AEROSPACE LTD
P1	P1	HAMKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO.
#	#	D3319
DATE	TITLE	SCALE
05.06.06	WEARPLATE	1:8
REV	DATE	DESCRIPTION
A	04.09.24	NEW ISSUE
B	05.06.06	WIDEN HOLES, REDUCE WIDTH -3/-5/-7

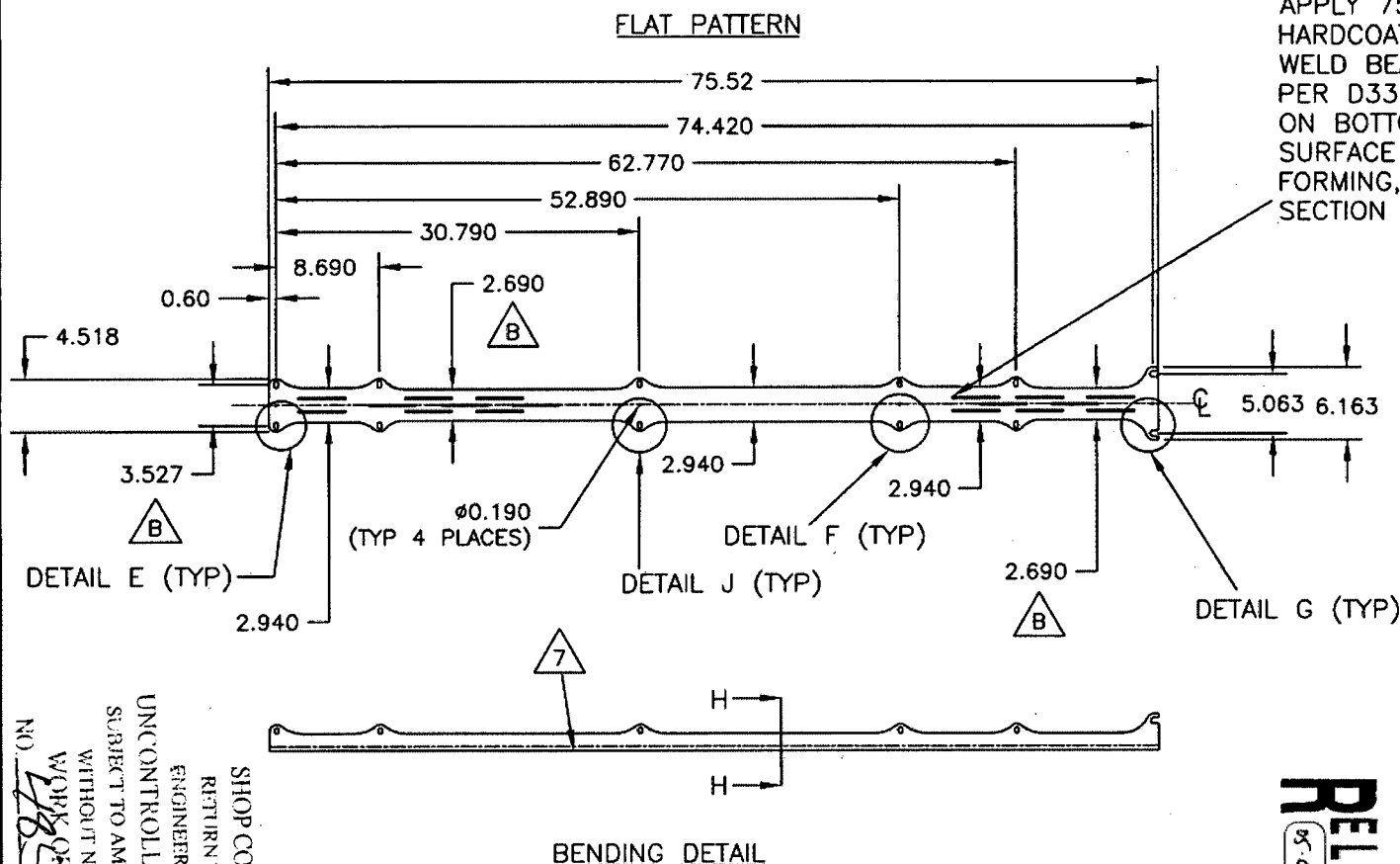
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**DART**

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED 04	APPROVED 04	DRAWING NO. D3319
DATE 05.06.06	TITLE WEARPLATE	REV. B SHEET 2 OF 5
	SCALE 1:15	

APPLY 7560  
HARDCOAT  
WELD BEADS  
PER D3319-3T1  
ON BOTTOM  
SURFACE AFTER  
FORMING, SEE  
SECTION H-H



**RELEASED**  
05-01-30

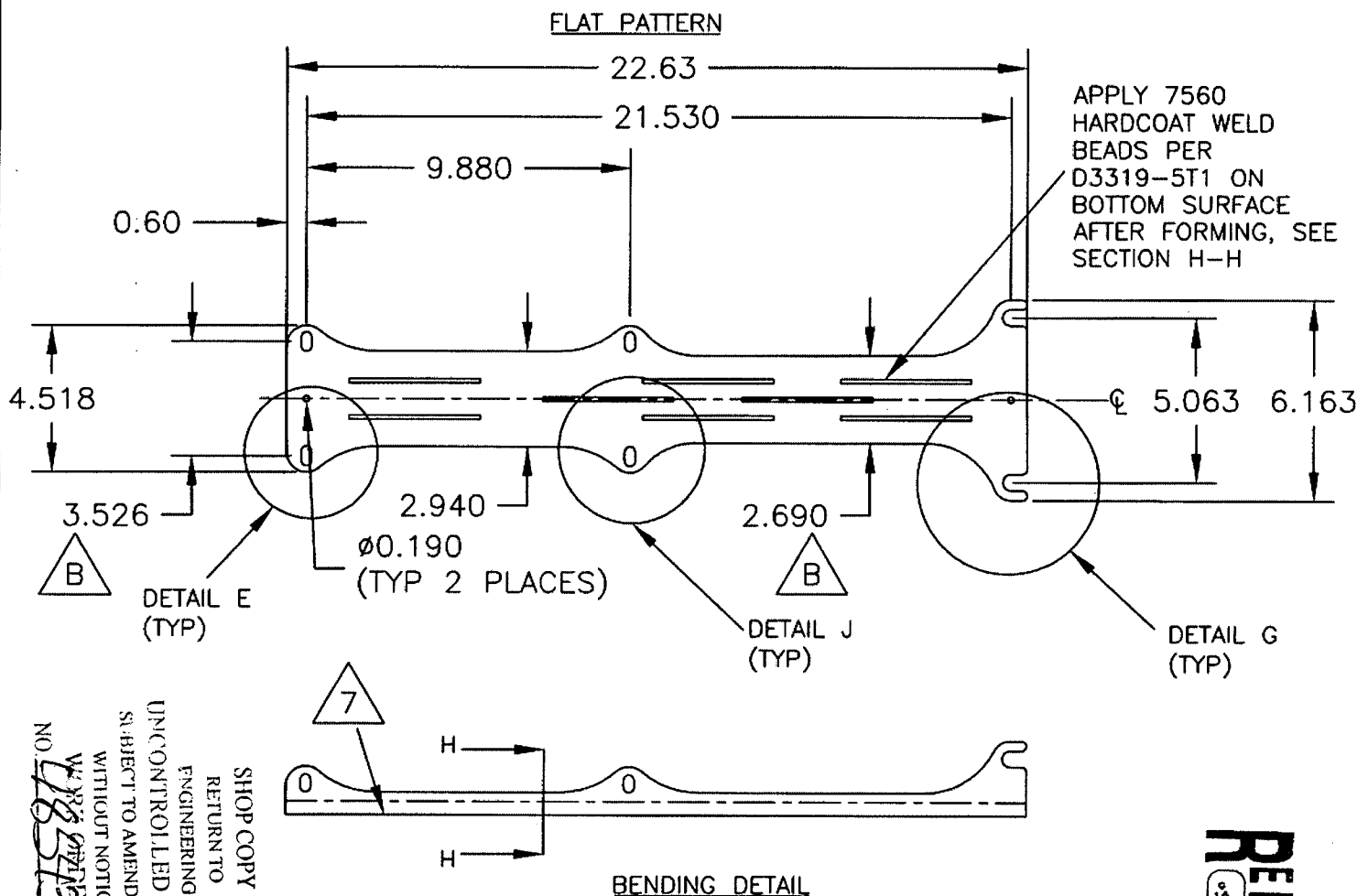
D3319-3 WEARPLATE

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:  
"TCCA-PDA, DART AEROSPACE LTD., P/N D3319-3 B/N BXXXXX,  
FOR PRODUCT ELIGIBILITY SEE PDA05-18"

SHOP COPY  
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WORK ORDER  
NO. 28573

**DART**

DESIGN	041	DRAWN BY	041	DART AEROSPACE LTD
CHECKED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA
DATE	05.06.06	TITLE	D3319	REV. B
		WEARPLATE		SHEET 3 OF 5
				SCALE 1:5

**RELEASED**  
05.09.30**D3319-5 WEARPLATE**

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:  
"TCCA-PDA, DART AEROSPACE LTD., P/N D3319-5 B/N BXXXXX,  
FOR PRODUCT ELIGIBILITY SEE PDA05-18"

NO. 48575  
W. J. P. 01/06  
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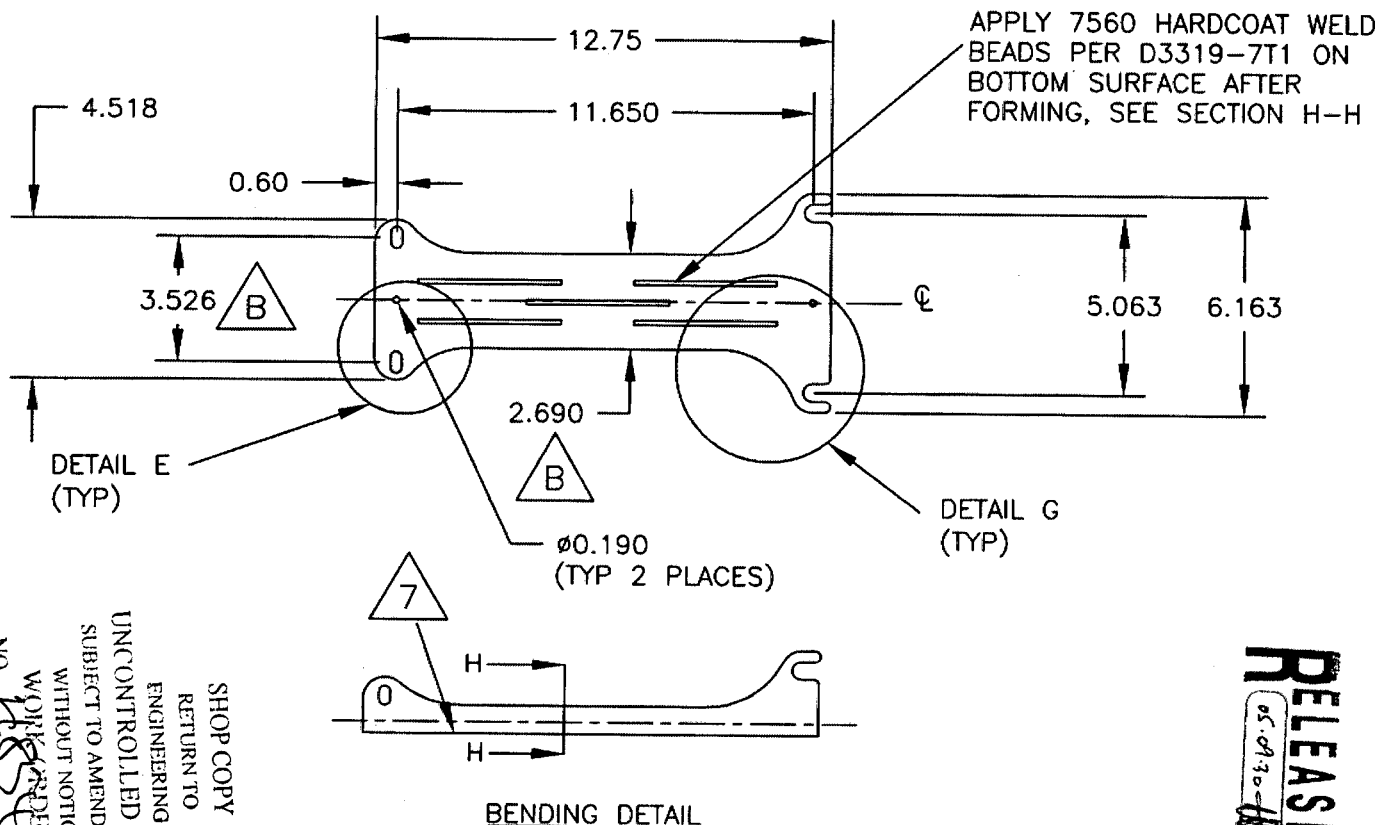


**DART**

DESIGN	PH	DRAWN BY	GH	DART AEROSPACE LTD
CHECKED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA
DATE	05.06.06	TITLE	D3319	REV. B
			WEARPLATE	SHEET 4 OF 5
				SCALE 1:5

**RELEASED**  
05.09.06

**FLAT PATTERN**



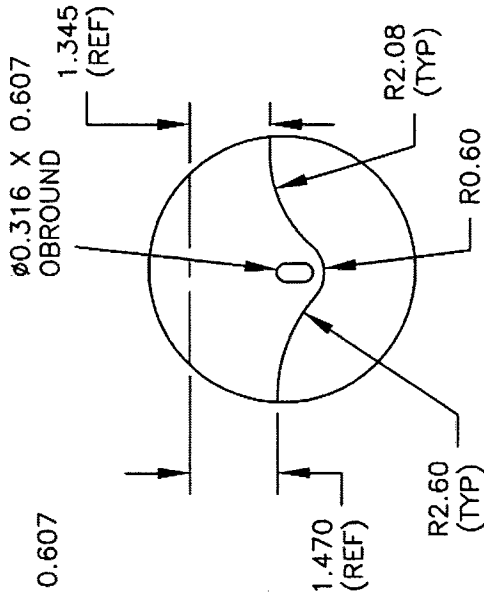
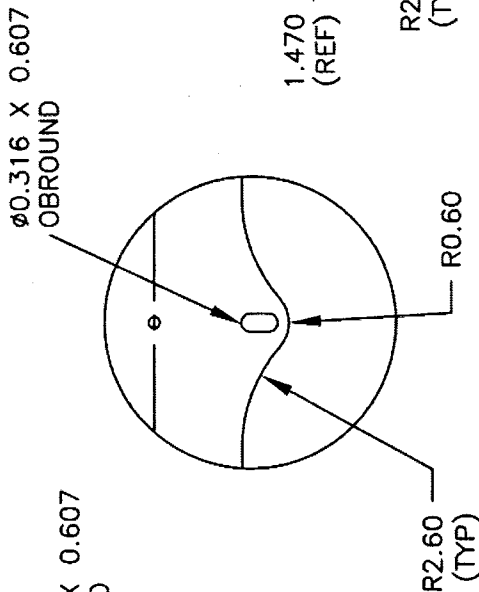
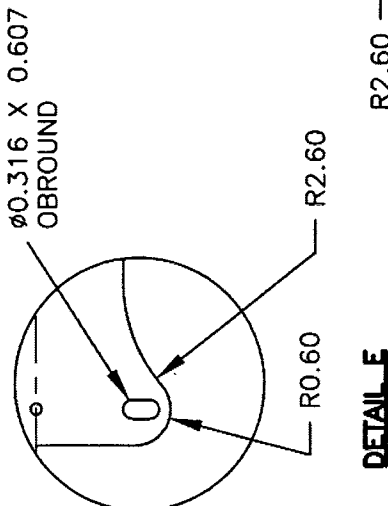
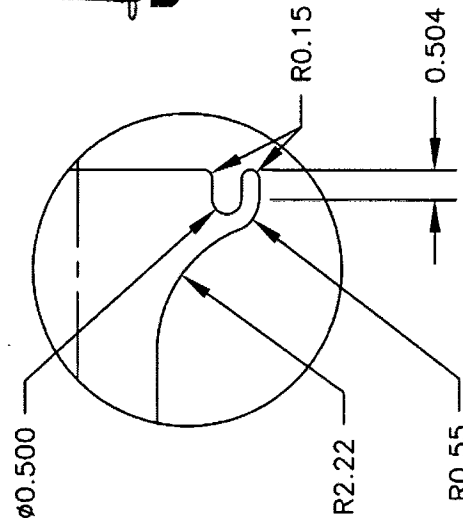
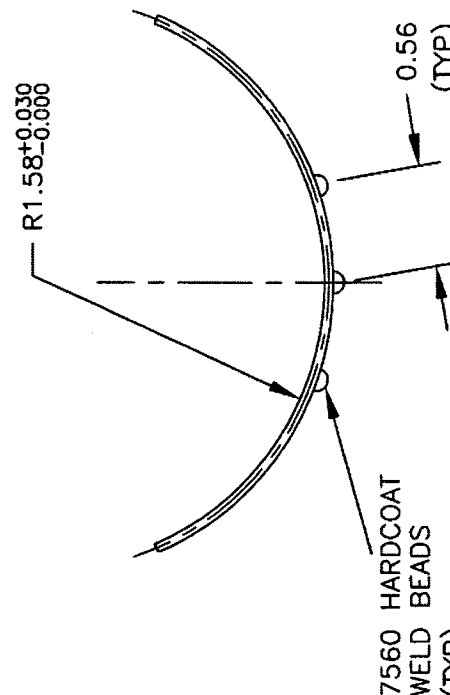
**D3319-7 WEARPLATE**

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER: "TCCA-PDA, DART AEROSPACE LTD., P/N D3319-7 B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-18"

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WORK ORDER NO. *[Signature]*

**DART**

DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D3319	REV. B SHEET 5 OF 5
DATE 05.06.06	TITLE WEARPLATE		SCALE 1:3

**RELEASED**  
05.09.30**DETAIL J****DETAIL I****DETAIL E****DETAIL G****SECTION H-H  
(SCALE 1:1)**

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